AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior listings and versions of claims in the application:

1 –14. (cancelled).

15. (currently amended) A plurality of carriers on which a plurality of different compounds can be synthesized, comprising a population of detectably distinct carriers wherein each carrier is covalently coupled to a synthon suitable for use in combinatorial synthesis, each carrier having a code which distinctively identifies a respective carrier before, during and after a combinatorial synthesis from other carriers, wherein said code is the same before, during and after said combinatorial synthesis, and wherein said code is characterized by at least ~~two~~ three detectable features integrally associated with the carrier, wherein each of said features detectably varies among a plurality of individual carriers within the population of carriers, wherein each individual carrier[[s]] comprises all the features that define a corresponding code before commencing synthesis of a respective compound thereon, wherein one of said features is not shape, or surface deformation(s) of the carrier, and wherein said at least ~~two~~ three detectable features comprise at least ~~two~~ three light emanating features comprising ~~a~~ two light scattering features and a molecular fluorescence feature, wherein said light scattering features comprise light side scattering and light forward scattering as determinable by flow cytometry.

16-17. (cancelled)

18. (currently amended) The plurality of carriers of claim 15, wherein said at least ~~two~~ three detectable features comprises a light emanating feature selected from the group consisting of luminescence, phosphorescence, and atomic fluorescence emission.

19. (currently amended) The plurality of carriers of claim 15, wherein said light emanating features are detectable by illuminating the respective carrier with incident light ~~of one or more~~ at at least one selected wavelength~~s or of one or more selected vectors~~.

20. (cancelled)

21. (previously presented) The plurality of carriers of claim 15, wherein said respective carrier comprises a fluorescent dye.

22. (previously presented) The plurality of carriers of claim 15, wherein each carrier is a colloidal particle.

23. (previously presented) The plurality of carriers of claim 15, wherein at least one of said features is incorporated into one or more microparticles.

24. (previously presented) The plurality of carriers of claim 15, wherein the carriers have different forms selected from the group consisting of pellet, disc, capillary, hollow fiber, needle, pin and chip.

25. (cancelled)

26. (currently amended) The plurality of carriers of claim 23, wherein said ~~one or more~~ at least one of said microparticles ~~comprises~~ is a microparticle selected from the group consisting of a colloidal microparticle and a ceramic microparticle.

27. (previously presented) The plurality of carriers of claim 26, wherein the ceramic microparticle is a silica microparticle.

28. (previously presented) The plurality of carriers of claim 26, wherein the said one or more microparticles comprises a microparticle of from about 0.01 μm to about 50 μm in diameter.

29. (currently amended) The plurality of carriers of claim 15, wherein a respective carrier comprises functionalities selected from the group consisting of-NH2, -COOH, -[[S]]OH, -[[S]]SH and sulfate.

30-62. (cancelled)

63. (currently amended) The plurality of carriers according to claim 29, wherein ~~one or more~~ at least one of said functionalities ~~are~~is attached to a linker.

64. (cancelled).

65. (currently amended) The plurality of carriers of claim 23, wherein said ~~one or more~~ at least one of said microparticles ~~comprises~~ is a microparticle having a shape selected from the group consisting of a sphere, a cube, a rectangular prism, a pyramid, a cone, an ovoid, a sheet, and a cylinder.

66. (currently amended) The plurality of carriers of claim 23, wherein said ~~one or more~~ at least one of said microparticles ~~comprises~~ is a microparticle attached to a carrier through colloidal interaction.